

Date: Monday, 02/03/2009 11:25:18 AM  
 User: Julie Dawson

## Process Sheet

Customer : CU-DAR001 Dart Helicopters Services Drawing Name : STEP WELDMENT  
 Job Number : 46182  
 Estimate Number : 12577  
 P.O. Number :  
 This Issue : 02/03/2009 S.O. No. :  
 Prsht Rev. : NC  
 First Issue : / / Type : LARGE FAB ASSY  
 Previous Run : 44491  
 Part Number : D3562042  
 Drawing Number : D3562 REV E  
 Project Number : N/A  
 Drawing Revision : E  
 Material :  
 Due Date : 27/03/2009 Qty: 3/4 Um: Each

Written By :  
 Checked & Approved By : JUD 09-03-02  
 Comment :  
 Est Rev:A New Issue 06-11-09 JLM  
 Est rev B ECN 987 07.10.09 EC verified by: DD  
 Est Rev:C ECN1048 07-12-18 DD verified by: EC  
 Est Rev:D 08-07-28 add chemical conversion coat DD  
 verified by:EC  
 Est Rev:E 09-02-27 (seq13) QC9 to QC10 DD verified by:EC

## Additional Product

Job Number:



Seq. #: Machine Or Operation: Description :

1.0 D2622120C Step Extrusion



Comment: Qty.: 1.0000 Each(s)/Unit Total: 4.0000 Each(s)  
 Qty Part # Description Batch:  
 1 D2622-120C Extrusion B44064

Check Material for any Dents or Defects

SAD 09-03-05 (4)

2.0 LARGE FAB 1 LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

1-Cut D2622 extrusion as per Dwg D3562

2-Deburr and bevel ends for welding

SAD 09-03-05 (4)

3.0 QC5 INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

SAD 09-03-05 (4)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

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Drawing Name: STEP WELDMENT

Job Number: 46182

Part Number: D3562042

Job Number:



Seq. #:

Machine Or Operation:

Description:

4.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

*PK* 09.03.12

5.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

*SAD* 09-03-12 (4)

6.0

D3560042

Arm Weldment



Comment: Qty.: 1.0000 Each(s)/Unit Total: 4.0000 Each(s)

ARM WELDMENT

Batch: *342369 = 1 \* 34442*

*PK* 09.03.13

7.0

D3560044

Arm Weldment



Comment: Qty.: 1.0000 Each(s)/Unit Total: 4.0000 Each(s)

ARM WELDMENT

Batch: *344474 = 1* *346403 = 2*

*PK* 09.03.13

8.0

MS20600AD4W5

Blind Rivet



Comment: Qty.: 32.0000 Each(s)/Unit Total: 128.0000 Each(s)

Blind Rivet

batch: *344474 = 1* *346403 = 2* *M110523*

*PK* 09.03.13

9.0

SMALL FAB 1

SMALL & MEDIUM FAB RESOURCE 1



Comment: SMALL & MEDIUM FAB RESOURCE 1

1- Drill Rivet holes as per dwg D3562. Touch up alodine

2- Rivet legs using Magnabond as per dwg D3562.


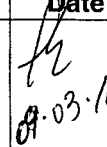
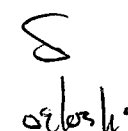

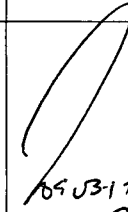
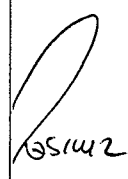
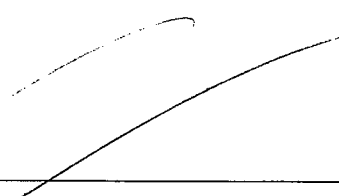
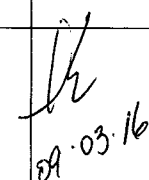


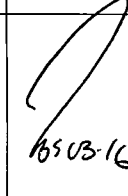
\*\*\*\*\*Ensure to wipe off any excess magnabond \*\*\*\*\*

A/R Magnabond 6398 Batch: *M110990* *M1108966*

*PK* 09.03.13

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D3562-042 PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes ☒ No ☐ DQA: D Date: 09/04/16  
 Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR: <u>46182</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
090316	9.0	1 step scrap: 1x D3560-042 arm scrap. Rivet had to be replaced: the hole was oversized. Upon a rework, too much weld was on the inside of the step causing another rework of the hole, i.e. enlarging other holes. Too much re-work in one area to accept the step.  R.C. faulty rework/process: human error.		Scrap & destroy 1 step & arm. No replace	 09-03-16	 09/03/16		 090316
					 09-03-16	 09/03/16	 09/03/16	 090316

NOTE: Date & initial all entries

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Part Number: D3562042

Job Number:



Seq. #:

Machine Or Operation:

Description :

10.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

Sort 03/19 (RH)

11.0

D2734

Step End Plate



Comment: Qty.: 2.0000 Each(s)/Unit Total: 8.0000 Each(s)

Pick:

Qty Part Number

Description Batch

2 D2734

End Cap 343535

FL 09.03.19 3

12.0

LARGE FAB 1

LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

1-Weld end caps as per Dwg D3562& QSI 004. Inspect for foreign objects as per QSI 024.

A/R Aluminum Rod M110130

FL 09.03.19 3

2-Grind end cap welds flush as per Dwg D3562

FL 09.03.19 3

13.0

QC10

VISUAL INSPECTION OF GROUND WELDS



Comment: VISUAL INSPECTION OF GROUND WELDS

09.03.19 (3)

14.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

09.03.19 (3)

15.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

FL 09/03/19 (3)

16.0

POWDER COATING

POWDER COATING



Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3

M110939

CMO/FL

09/03/23

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
09/03/23	16.0	Start time: <u>15:40</u> temperature: <u>320°</u> finish time: <u>16:10</u>	umg FJ	09/03/23	3		

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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**NOTE:** Date & initial all entries

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Job Number:



Seq. #:

Machine Or Operation:

Description :

17.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Wing Walk as per Dwg D3562 and QSI 005 4.4

Batch: 10997

BR 09-03-24

(3)

18.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

09-03-24

(V3)

19.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: G-A

EP 09/03/31

(3)

20.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

09/04/01

Job Completion



MF  
09-03-31

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



D3562-1,  
MAKE FROM  
EXTRUSION D2622

2  
APPLY BLACK  
ANTI-SKID ON  
TOP SURFACE  
TO BOTTOM  
OF TOP RADIUS

D3560-043 ARM WELDMENT

D3560-041 ARM WELDMENT

D3560-044 ARM WELDMENT

D3560-042 ARM WELDMENT

D3562-1,  
MAKE FROM  
EXTRUSION D2622

2  
APPLY BLACK  
ANTI-SKID ON  
TOP SURFACE  
TO BOTTOM  
OF TOP RADIUS

TRANSFER DRILL #30  
DEBURR & TOUCH UP HOLES  
WITH CHEMICAL CONVERSION  
COAT BEFORE RIVETING  
(32 PLACES PER STEP)

REFER TO STEP  
END DETAIL

INSTALL MS20600AD4W5 RIVET  
(32 PLACES PER STEP)

MEASURED BEFORE END CAPS WELDED IN PLACE

FWD

MEASURED BEFORE END CAPS WELDED IN PLACE

FWD

ROUND CORNER OF EXTRUSION TO  
MATCH BEND RADIUS OF END PLATE

NOTE: ALL WELDS SHALL BE 100%  
VISUALLY INSPECTED BY A  
QUALIFIED INSPECTOR PER  
DART QSI 004

D2734 END PLATE  
(TYP 2 PLACES)  
TYPICAL STEP END DETAIL  
SCALE 1:2

### D3562-041 LH STEP ASSEMBLY

### D3562-042 RH STEP ASSEMBLY

#### NOTES:

1) MATERIAL: N/A

2) FINISH:

i) CHEMICAL CONVERSION COAT STEP EXTRUSION  
PER DART QSI 005 4.1 BEFORE ASSEMBLY

ii) POWDER COAT ASSEMBLY GLOSS WHITE (4.3.5.1) OR  
GREY SANDLEX (4.3.5.6) OR  
BLACK SANDLEX (4.3.5.7) OR  
GREEN SANDLEX (4.3.5.8) PER DART QSI 005 4.3

iii) BLACK ANTI-SKID PAINT PER DART QSI 005 4.4

3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED

4) UNITS: INCHES UNLESS OTHERWISE NOTED

5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX

6) IDENTIFICATION: NONE

7) WEIGHT: 8.79 lbs

8) INSTALL ARM WELDMENTS WITH A LAYER OF MAGNOBOND 6398 BETWEEN  
THE ARM WELDMENT AND STEP EXTRUSION. FILL ANY TOOLING HOLES WITH  
MAGNOBOND 6398. CLEAN OFF EXCESS BEFORE POWDER COATING.

9) WELDING: PER DART QSI 004

QTY -041	QTY -042	P/N	DESCRIPTION
X	X	D3562-041	LH STEP ASSEMBLY
		D3562-042	RH STEP ASSEMBLY
1		D3560-041	ARM WELDMENT
	1	D3560-042	ARM WELDMENT
1		D3560-043	ARM WELDMENT
	1	D3560-044	ARM WELDMENT
32	32	MS20600AD4W5	RIVET
2	2	D2734	END PLATE

E	ADD QTY (2) TO D2734 END PLATE ON D3562-042	PH	08.01.11
D	REMOVE D2808 SPACER NOTE; REDRAWN IN SOLIDWORKS	DC	07.11.16
C	NOW MAGNOBOND, ADD D2808, REMOVE 4 RIVETS	CP	07.06.19
B	ARMS NOW RIVETED TO STEP	CP	07.01.15
A	NEW ISSUE	CP	06.09.26
REV.	DESCRIPTION	BY	DATE
DESIGN	GP	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA DRAWING NO. <b>D3562</b> TITLE <b>STEP ASSEMBLY</b> SCALE 1:5 <small>COPYRIGHT © 2008 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSES OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD</small>	
DRAWN	GP		
CHECKED	KE		
MFG. APPR.	MP		
APPROVED	MP		
DE APPR.	MP		
DATE	08.01.11		

E